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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/505,282	08/20/2004	Mikio Ikenishi	330-281	5541

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EXAMINER
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FALASCO, LOUIS V

ART UNIT	PAPER NUMBER
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1773

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/10/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/505,282

Applicant(s)

IKENISHI ET AL.

Examiner

Louis Falasco

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) 4-11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 10/26/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

#### *Papers Received*

1. The Response to Restriction requirement filed 10/31/06.
2. The Information Disclosure Statement filed 10/26/04.

#### *Claims*

3. The claims are: 1 to 11.

#### *Election/Restriction of Invention*

4. Applicant's election of Group I, species A, corresponding to claims 1 to 3, in the Response to Restriction filed on 10/26/04 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).
5. The claims 4 to 11 have been withdrawn.
6. The claims under consideration are 1 to 3.

The requirement has been made FINAL.

### ***Claim Rejections - 35 U.S.C. §102 and 35 U.S.C. §103***

#### ***Statutory Basis***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

#### ***Rejections***

7. Claims 1 to 3 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over **Nakashima et al** (US 6387510).

**Nakashima et al** teaches the requirements of these claims except failing to addressing the (characteristic) etching rate for the glass.

**Nakashima et al** teaches a glass substrate for an information recording medium, having a *glass transition temperature* ( $T_g$ ) range 600°C or higher (**Nakashima et al** col. 3 lns 12, 13 and Examples summarized at Tables 1-5 cols. 8 - 11).

Though **Nakashima et al** does not make reference to an *etch rate*, this is merely a characteristic of the glass inherent in its components dissolution reactions (e.g.,  $SiO_2$ , etc.). Since **Nakashima et al** teaches the same composition as that disclosed so it would be expected to fall into the same *etch rate* range. The *etch rate* is merely an inherent property of the glass composition the same composition would be expected to have the same properties, see MPEP 2112.01 II. '[T]he discovery of the property of a prior art composition . . . does not render the old composition patentably new to the discoverer.' Atlas Powder Co. v. Ireco Inc., 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999); In re Best, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977); In re Crish, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004); etc.

Alternate to anticipation: it would have been at least obvious to one having ordinary skill in the art at the time the invention was made to adopt an etch rate within 0.1  $\mu m/minute$  or less with a *hydrosilicofluoric acid* aqueous solution maintained 45°C and a *hydrosilicofluoric acid* concentration at the instant 1.72% by weight within the **Nakashima et al** glass composition by routine optimize intended production conditions as conventional efficiency trade offs between production conditions. When a product

has been shown to have the same composition it is applicants burden to demonstrate they are different products.

As regard claim 2 and 3: the **Nakashima et al** glass substrate has a  $SiO_2$ ,  $Al_2O_3$ ,  $CaO$  and  $K_2O$  ('contains . . . as essential components' is considered open MPEP 2111.03) and a composition comprising, in mol %: 45 to 70% of  $SiO_2$ , 1 to 15% of  $Al_2O_3$ , with the total content of  $SiO_2$  and  $Al_2O_3$  between 57 to 85%; 2 to 25% of  $CaO$ , 0 to 15% of  $BaO$ , 0 to 15% of  $MgO$ , 0 to 15% of  $SrO$ , 0 to 10% of  $ZnO$ , with the total content of  $MgO$ ,  $CaO$ ,  $SrO$ ,  $BaO$  and  $ZnO$  between 2 to 30%; more than 0% but not more than 15% of  $K_2O$ , 0 to 8% of  $Li_2O$ , 0 to 8% of  $Na_2O$ , the total content of  $K_2O$ ,  $Li_2O$  and  $Na_2O$  between 2 to 15%; 0 to 12% of  $ZrO_2$  and 0 to 10% of  $TiO_2$ , the total content of above components being at least 95% (see **Nakashima et al** col. 2 lns 42 - 57, col. 3 lns 3 to col. 4 ln 14, noting the optimization of  $SiO_2$  and  $Al_2O_3$  pointed out at col. 4 lns 15 - 30 and Tables 1 through 5 compositions at columns 8 to 11).

8. Alternatively: claims 1 to 3 are rejected under 35 U.S.C. §103(a) as being unpatentable over **Nakashima et al** (US 6387510) taken with **Miyamoto** (US 6395634).

**Nakashima et al** teaches the requirements of these claims except failing to address a characteristic etch rate for the glass - specifically an etch rate of  $0.1 \mu m/minute$  or less with regard to a hydrosilicofluoric acid aqueous solution maintained at  $45^\circ C$ . and a 1.72% by weight *hydrosilicofluoric acid concentration*.

**Nakashima et al** teaches a glass substrate for an information recording medium, having a *glass transition temperature ( $T_g$ ) is  $600^\circ C$  or higher* (**Nakashima et al** col. 3 lns 12,13).

Though **Nakashima et al** does not make reference to a rate of the etch for the glass. **Miyamoto** teaches the worker of ordinary skill optimizing the glass substrate formulations within an etch rate within  $0.1 \mu\text{m}/\text{minute}$  or less (**Miyamoto** col. 7 lns 4-15) with a hydrosilicofluoric acid aqueous solution maintained within  $45^{\circ}\text{C}$  and a *hydrosilicofluoric* acid concentration in the middle of the instant 1.72% by weight (**Miyamoto** col. 7 lns 28).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to adopt an etch rate within  $0.1 \mu\text{m}/\text{minute}$  or less with a *hydrosilicofluoric* acid aqueous solution maintained  $45^{\circ}\text{C}$  and concentration at the instant 1.72% within the **Nakashima et al** glass composition would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the glass of **Nakashima et al** to an etch rate within  $0.1 \mu\text{m}/\text{minute}$  or less with a *hydrosilicofluoric* acid aqueous solution maintained  $45^{\circ}\text{C}$  and a concentration of 1.72% as shown by **Miyamoto** for the purpose of routinely balancing processing conditions such as time and temperature, controlling the substrate surface characteristics. One skilled in the art would have been motivated to adopt the **Miyamoto** with the expectation of increasing the surface of the substrate for magnetic recording media (**Miyamoto** col. 6 lns 62-64, col. 7 lns 16-17, col. 8 lns 21-24).

As regards claims 2 and 3: the **Nakashima et al** glass substrate has  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{CaO}$  and  $\text{K}_2\text{O}$  (instant claim 2) glass composition comprising, in mol %: 45 to

70% of  $\text{SiO}_2$ , 1 to 15% of  $\text{Al}_2\text{O}_3$ , with the total content of  $\text{SiO}_2$  and  $\text{Al}_2\text{O}_3$  between 57 to 85%; 2 to 25% of  $\text{CaO}$ , 0 to 15% of  $\text{BaO}$ , 0 to 15% of  $\text{MgO}$ , 0 to 15% of  $\text{SrO}$ , 0 to 10% of  $\text{ZnO}$ , with the total content of  $\text{MgO}$ ,  $\text{CaO}$ ,  $\text{SrO}$ ,  $\text{BaO}$  and  $\text{ZnO}$  between 2 to 30%; more than 0% and not more than 15% of  $\text{K}_2\text{O}$ , 0 to 8% of  $\text{Li}_2\text{O}$ , 0 to 8% of  $\text{Na}_2\text{O}$ , the total content of  $\text{K}_2\text{O}$ ,  $\text{Li}_2\text{O}$  and  $\text{Na}_2\text{O}$  between 2 to 15%; 0 to 12% of  $\text{ZrO}_2$  and 0 to 10% of  $\text{TiO}_2$ , the total content of above components being at least 95% (Nakashima et al col. 2 lns 42 – 57, col. 3 lns 3 to col. 4 ln 14, noting the optimization of  $\text{SiO}_2$  and  $\text{Al}_2\text{O}_3$  pointed out at col. 4 lns 15 – 30 and Examples summarized at Tables 1 through 5 at cols. 8 - 11).

### ***Double Patenting***

#### *Judicial basis*

This is a provisional obvious-type double patenting rejection because the conflicting claims have not in fact been patented.

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double



patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

9. Claims 1 to 3 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 4 of copending **Application No. SN 10/532863** (corresponding to US 2006/0216552) alone or in view of with **Miyamoto** (US 6395634).

Application No. **10/532863** claims what has been instantly claimed except failing to address a characteristic etching rate - specifically an etch rate of  $0.1 \mu\text{m}/\text{minute}$  or less with regard to a *hydrosilicofluoric acid* aqueous solution maintained at  $45^{\circ}\text{C}$ . and a 1.72% by weight *hydrosilicofluoric acid* concentration.

Application No. **10/532863** claims (re: claims 1 to 3) glass substrate for an information recording medium, having a *glass transition temperature* ( $T_g$ ) of  $600^{\circ}\text{C}$  or higher. The glass substrate has  $\text{SiO}_2$ ,  $\text{Al}_2\text{O}_3$ ,  $\text{CaO}$  and  $\text{K}_2\text{O}$  (as instant claim 2) glass composition comprising, in mol %: 45 to 70% of  $\text{SiO}_2$ , 1 to 15% of  $\text{Al}_2\text{O}_3$ , with the total content of  $\text{SiO}_2$  and  $\text{Al}_2\text{O}_3$  between 57 to 85%; 2 to 25% of  $\text{CaO}$ , 0 to 15% of  $\text{BaO}$ , 0 to 15% of  $\text{MgO}$ , 0 to 15% of  $\text{SrO}$ , 0 to 10% of  $\text{ZnO}$ , with the total content of  $\text{MgO}$ ,  $\text{CaO}$ ,  $\text{SrO}$ ,  $\text{BaO}$  and  $\text{ZnO}$  between 2 to 30%; more than 0% but not more than 15% of  $\text{K}_2\text{O}$ , 0 to 8% of  $\text{Li}_2\text{O}$ , 0 to 8% of  $\text{Na}_2\text{O}$ , the total content of  $\text{K}_2\text{O}$ ,  $\text{Li}_2\text{O}$  and  $\text{Na}_2\text{O}$  between 2 to

Art Unit: 1773

15%; 0 to 12% of  $ZrO_2$  and 0 to 10% of  $TiO_2$ , the total content of above components being at least 95% (instant claim 3 and claim 1 of application 10/532863). Though application SN 10/532863 does not claim reference to an *etch rate*, The instant etch rate would have been obvious from the glass substrate composition SN 10/532863 claims as a mere matter of optimization of the composition since Miyamoto teaches the worker of ordinary skill to optimize to the instantly claimed etch rate within  $0.1 \mu m/minute$  or less (Miyamoto col. 7 lns 4-15) with a *hydrosilicofluoric acid* aqueous solution at  $45^\circ C$  and a *hydrosilicofluoric acid* concentration in the middle of the instant 1.72% by weight (Miyamoto col. 7 lns 28).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to optimize the composition claimed in application 10/532863 to an *etch rate* the within  $0.1 \mu m/minute$  or less with a *hydrosilicofluoric acid* aqueous solution maintained at  $45^\circ C$  and a *hydrosilicofluoric acid* concentration at 1.72 as taught by Miyamoto for the purpose of routinely balancing processing conditions such as time and temperature, controlling the substrate surface characteristics. One skilled in the art would have been motivated to adopt the Miyamoto with the expectation of increasing the surface of the substrate for magnetic recording media (Miyamoto col. 6 lns 62-64, col. 7 lns 16-17, col. 8 lns 21-24) and with the expectation of increasing the surface of the substrate for magnetic recording media (Miyamoto col. 6 lns 62-64, col. 7 lns 16-17, col. 8 lns 21-24).

### ***Other References***

**Marshall** (US 5499731) and **Wilson et al** (US 5895582) are cited as being of interest teaching that etch rates, such as instantly claimed, are routinely optimized for balancing properties as tensile and rupture strengths, oxidation resistance and the ability of the sheet material to be formed or worked." both teach an etch rate as a corresponding to a composition optimally balancing production temperature conditions while controlling the smoothness of the substrate of optimization

**Marshall** and **Wilson et al** both teach glass comprised of  $SiO_2$  and  $Al_2O_3$  between 57 to 85%,  $MgO$ ,  $CaO$ ,  $Na_2O$ , and  $K_2O$  and point out that the etch rate is an inherent property of the glass and the etch rate is routinely optimized so as to be compatible with substrate processing conditions. Both show this in accordance with well know operating conditions including temperature - the etch rate is known to vary linearly with temperature (see **Marshall** at col. 3 lns 5-8, col. 8 lns 25-28, col. 9 lns 16-21 and **Wilson et al** col. 2 lns 59-62, col. 7 lns 2-12).

**Zou** (US 6599606) is cited as being of interest cumulatively teaching a glass substrate for an information recording medium, having a *glass transition temperature* ( $T_g$ ) =  $600^\circ C$  or higher (**Zou** col. 8 lns 5, 15, 16; and  $T_g$  in example compositions shown in Table 2 col. 13 and Table 3 col. 15).

### *Conclusion*

10. The claims are 1 to 11.
  - Restriction has been required.
11. The invention elected corresponds to claims 1 to 3.
  - Claims 1 to 3 have been rejected.
  - No claim has been allowed.
12. Information Disclosure Statement has been received and considered.

### INQUIRES

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Louis Falasco, PhD whose telephone number is (571)272-1507. The examiner can normally be reached on M-F 10:30 - 7:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol D. Chaney, PhD can be reached at (571)272-1284. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
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**CAROL CHANEY**  
SUPERVISORY PATENT EXAMINER